New and rare species of the genus *Hylaeus* FABRICIUS, 1793 for the fauna of Poland (Hymenoptera: Apoidea: Colletidae)

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Received: 9 July 1999
Accepted for publication: 8 September 1999


Abstract. First records of *Hylaeus cardioscapus* COCKERELL and *Hylaeus gredleri* FÖRSTER (Colletidae) from Poland are presented. New Polish localities of *Hylaeus leptoccephalus* (MORAWITZ), *H. paulus* BRIDWELL and *H. rinki* (GORSKI) are given. Their morphology, distribution and bionomics are described.

Key words: Hymenoptera, Apoidea, Colletidae, *Hylaeus*, Poland.

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I. INTRODUCTION

*Hylaeus* (Apoidea: Colletidae) is a rather large cosmopolitan genus, whose members are known from all continents (except Antarctica). More than 400 species have been described from the world so far, of which over 100 occur in the Palaearctic, and 63 species occur in Europe (DATHE, 1980, 1996). Hitherto 26 species of *Hylaeus* have been recorded from Poland (BANASZAK, 1991; CELARY & DYLEWSKA, 1988; DYLEWSKA, 1997; RADA & Pawlikowski, 1999). All native members of the genus belong to summer bees and have one generation.

In results of my research on wild bees (Apoidea) of the Kraków-Częstochowa Upland, two species new to Poland (*Hylaeus cardioscapus* COCK. and *Hylaeus gredleri* FÖRST.), and three very rare species (*Hylaeus leptoccephalus* (MOR.), *Hylaeus paulus* BRIDW., and *Hylaeus rinki* (GOR.) were found.

In the present paper the diagnosis, distribution and bionomics data for each species are given. The systematics applied in this paper follows DATHE (1980). Information about the distribution of presented species was given after CELARY & DYLEWSKA (1988), DATHE (1980), DATHE et al. (1996), OSYTHSHNIUK & ROMANKOVA (1995), RASMONT et al. (1995), SCHWARZ et al. (1996) and WARNCKE (1986). Data on the bionomics, as the food plants (flowers visited), flight season and nesting sites come from the papers of CELARY & DYLEWSKA (1988), DATHE et al. (1996) and WESTRICH (1989), and from the data on labels of the material examined. Each Polish locality has coordinates of UTM grid.

Material is housed in the Institute of Systematics and Evolution of Animals of Polish Academy of Sciences, Kraków.
Acknowledgements. I would like to express my sincere thanks to Professor Holger H. Dathe of Deutsches Entomologisches Institut in Eberswalde (Germany) for checking the determinations.

II. SYSTEMATIC PART

**Hylaeus (Dentigera) gredoeri** Förster, 1871

Figs 1-2

**Diagnosis.** Males of *H. gredoeri* can be distinguished from those of other species in the subgenus *Dentigera* by the swollen scapes of antennae with yellow-white apical spots (Fig. 1), densely punctured and rough fovea scapales, microsculptured first tergum of abdomen, and third sternum (sometimes fourth one, too) with a pair of small tubercles in the middle. Females can be separated from those of other species in the subgenus by tridentate mandibles, black and densely punctured clypeus, and narrow, yellow-white stripes on paraocular areas (along the inner margins of compound eyes) which extend above the antennal sockets (Fig. 2).


**Distribution.** Europe (Austria, Corsica, France, Germany, Switzerland, Ural) and Caucasus; northern limit distribution – 51°N. The type of distribution indicates that it is a European element in the fauna of Poland.

**Comments.** Till now *Hylaeus gredoeri* Först. has not been recorded from Poland. Recently, the species was found in three sites of southern Poland (see below).


**Hylaeus (Hylaeus) cardioscapus** Cockerell, 1924

Figs 3-5

**Diagnosis.** Males of *H. cardioscapus* can be distinguished from those of other species in the subgenus *Hylaeus* by the malar areas shorter than the width of the base of the mandibles, partly yellow and cordate scapes of antennae (Fig. 3), upper part of supraclypeal area inconsiderable narrower than the lower one, a characteristic yellow ornament on the face (Fig. 4), black scutellum, flat third sternum, and polished first tergum. Females of the species can be separated by clypeus without a longitudinal concavity, the characteristic yellow ornament on the paraocular areas (Fig. 5), mesopleurans without sharp edges in the anterior parts, punctuation of mesopleurans similar (only inconsiderably coarser) to the same on the mesonotum, black scutellum, black middle and hind basitarsi, and the first tergum of abdomen without lateral fasciae on the distal margin.


**Distribution.** – Central and East Europe (eastern Austria and eastern Germany, Finnland, Poland and Ukraine); Asia (Siberia, Russian Far East: Amur oblast, Khabarovsk Kray,
Chita oblast, Kamchatka Peninsula, Primorskiy Kray, Sakhalin Island); northern limit distribution – 63°N. The type of distribution indicates that it is East Palaeartic element in the fauna of Poland.

Comments. Till now *Hylaecus cardioscapus* COCK. has not been recorded from Poland. Three localities from southern Poland of this species are given herein.


**Hylaecus (Hylaecus) leptocephalus** (MORAWITZ, 1870)

Fig. 6

Diagnosis. Males of *H. leptocephalus* can be distinguished from those of other species in the subgenus *Hylaecus* by the cylindrical scapes of antennae with white-yellow apical spots, white supraocular area, characteristic white ornament on the face (Fig. 6), malar areas shorter than width of the base of the mandibles, and flat third sternum. Females of the species can be separated by the clypeus without a longitudinal concavity, black scutellum, mesopleurons with punctuation distinctly coarser than that of mesonotum, first tergum of abdomen polished and without lateral fasciae on the distal margin, and black middle and hind basitarsi.


Distribution. Europa (Austria, Belgium, Czech, Denmark, France, Germany, southern Latvia, Luxembourg, Netherland, Slovakia, Switzerland, Ukraine, European part of Russia: Bashkiria), West Asia (Caucasus, Iran, Turkey); northern limit distribution – 57°N. The type of distribution indicates that it is a Subpontine element in the fauna of Poland.

Comments. Till now the species was known in Poland from seven localities only (VV83 Goleniów, WV58 Karłino, XA33 Słupsk, XA88 Sierakowice, CF12 Kartuzy, DC27 Łowicz, EB22 Opatów (CELARY, DYLEWSKA, 1988)). Unfortunately, all data concerning *Hylaecus leptocephalus* (MOR.) come from the early 20th century. BANASZAK (1991) writes: “Reported from single localities by out of date entomologists. Its occurrence should be checked”. Recently the species was found in two sites of southern Poland.


**Hylaecus (Hylaecus) paulus** BRIDWELL, 1919

Figs 7-9

Synonym. *Hylaecus lepidulus* COCKERELL, 1924

Diagnosis. The species is closely related to *Hylaecus gracilicornis* (MOR.). Males of *H. paulus* can be separated from the males of *H. gracilicornis* (after DATHE et al., 1996) by the V-shaped apical part of median process of eighth sternum (Fig. 7), and characteristic ornament on the face (Fig. 8). Females can be told from these of *H. gracilicornis* by the deep propodeal groove without sharp lateral edges (Fig. 9).

Distribution. Southern part of Western Central Europe (Austria, Germany, Poland, Switzerland), Asia (Mongolia, Siberia, Russian Far East: Amur oblast, Khabarovsk Kray, Kurile Islands, Primorsky Kray; Japan; northern limit distribution – 54°N). The type of distribution indicates that it is a Eurosiberian element in the fauna of Poland.

Comments. Till now, *Hylaeus paulus* Cock. was known in Poland from the only locality – XT26 Rogaczewo (Dathe et al, 1996). Recently, the species was found in two sites of southern Poland.

Hylaeeus (Lambdopsis) rinki (GORSKI, 1852)

Fig. 10

Diagnosis. Males of H. rinki can be separated from those of other species in the subgenus Lambdopsis by the black mandibles, extremely wide (twice wider than their length) scape of antennae (Fig. 10), yellow-red dorsal surfaces of flagellomeres, densely and deep punctured mesonotum with a distinct microsculpture, microsculptured first tegrum, and transversal swells on sterna 3-4. Females of the species can be separated from those of other species in the subgenus by an entirely black face, black or brown ventral surface of flagellum of antennae, mesopleuron without sharp edges on the anterrior parts, microsculptured and densely punctured (rough) mesothorax, and polished and almost unpunctured first tegrum of abdomen.

Biometrics. Flight season: from June till end of August. – Flowers visited: Apiaceae (Daucus carota L. and Heracleum spondylium L.), Asteraceae (Cirsium vulgare (SAVI) TEN. and Solidago gigantea AITON) and Rosaceae (Potentilla erecta (L.) RAUESCH. and Rubus fruticosus L. NOM. AMBIG.). – Nest: in wooden walls, wooden bars and poles or in stems of blackberry (Rubus L.).

Distribution. Eastern part of West Europe, Central and East Europe (Austria, Belgium, Czech, Denmark, southern Finland, France, Germany, Netherlands, Poland, Slovakia, Switzerland, Ukraine, Asia (West Asia, Mongolia, Siberia, Russian Far East: souther part of Primorski Kray); northern limit distribution – 63°N. The type of distribution indicates that it is a Eurosiberian element in the fauna of Poland.

Comments. Till now, Hylaeeus rinki (GORSKI) was known in Poland from eight localities only (VV83 Goleniów, FF31 Szymanowizna, XU79 Nakło, WS66 Jerzmanice Zdrój and Podgórnik, XS15 Piotrowice, XS36 Wrocław-Redzin, EB22 Opłatów (CELARY, DYLEWSKA, 1988)), but all the data come from early 20th century. Recently the species was found in two sites of southern Poland.


REFERENCES


